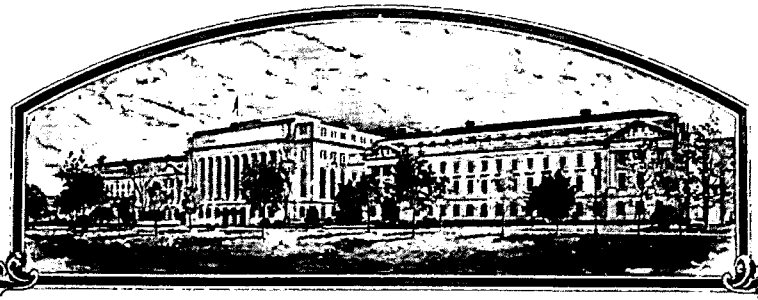

No. 201500077

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Monsanto Technology LLC

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

An application requesting a certificate of protection for an alleged distinct variety of sexually reproduced, or tuber propagated plant, the name and description of which are contained in the application and exhibits, a copy of which is hereunto annexed and made a part hereof, and the various requirements of law in such cases made and provided have been complied with, and the title thereto is, from the records of the PLANT VARIETY PROTECTION OFFICE, in the applicant(s) indicated in the said copy, and whereas, upon due examination made, the said applicant(s) is (are) adjudged to be entitled to a certificate of plant variety protection under the law.

Now, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of TWENTY years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by law, the right to exclude others from selling the variety, or offering it for sale, or reproducing it, or importing it, or exporting it, or conditioning it for propagation, or stocking it for any of the above purposes, or using it in producing a hybrid or different variety there from, to the extent provided by the PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN, FIELD

'A1396Z'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the* ***City of Washington, D.C.*** *this twelfth day of May, in the year* ***two thousand and sixteen.***

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

Form Approved - OMB No. 0581-0055

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Monsanto Technology LLC

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME

3. VARIETY NAME
A1396Z

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4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
800 N. Lindbergh Blvd.
St. Louis, MO 63167
USA

5. TELEPHONE *(include area code)*
815-758-9281

6. FAX *(include area code)*
815-758-3117

PVPO NUMBER
201500077

FILING DATE
Januray 20, 2015

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Limited Liability Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
Delaware

9. DATE OF INCORPORATION
March 2, 2000

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
~~Timothy R. Kain 8350 Minnegan Rd, Waterman, IL 60556~~
~~Chunping Li 800 North Lindbergh Blvd., St. Louis, MO 63167~~
Marymar Butruille 3302 S.E. Convenience Blvd. Ankeny, IA 50021

11. TELEPHONE (Include area code) 515-965
~~815-758-9281~~ -3077

12. FAX (Include area code) 515-963-4242
~~815-758-3117~~

FEES RECD
FILING AND EXAMINATION FEES:
$ 4382.00 DATE 1/20/2015
CERTIFICATION FEE:
$
DATE

13. E-MAIL marymar.butruille@monsanto.com
~~trkain@monsanto.com~~

14. CROP KIND *(Common Name)*
Field Corn

15. GENUS AND SPECIES NAME OF CROP
Zea mays

16. FAMILY NAME *(Botanical)*
Graminae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ■ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES?
☐ YES ☐ NO
IF YES, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 21 and 22 below)*
■ NO *(If "no", go to item 23)*
☐ UNDECIDED

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions)
a. ■ Exhibit A. Origin and Breeding History of the Variety
b. ■ Exhibit B. Statement of Distinctness
c. ■ Exhibit C. Objective Description of Variety
d. ■ Exhibit D. Additional Description of the Variety *(Optional)*
e. ■ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ■ Filing and Examination Fee ($4,382).
✓ Make checks and money orders payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*
✓ *Credit Card Payments (See instructions on Page 2 of 10)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☐ YES ☐ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
___ FOUNDATION ___ REGISTERED ___ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
■ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ■ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed will be furnished directly to an acceptable depository in support of the variety within three months of filing. Seed will be replenished upon request in accordance with such regulations as may be applicable. For a tuber propagated variety or vegetative propagated parent of the variety, a tissue culture or vegetative sample will be deposited in a public repository within three months of the date of the certificate fee request letter. These will be maintained for the duration of the certificate." The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER
Timothy R. Kain

NAME *(Please print or type)*
Timothy R. Kain

CAPACITY OR TITLE
Patent Scientist

DATE
15 JAN 2015

SIGNATURE OF OWNER

NAME *(Please print or type)*

CAPACITY OR TITLE

DATE

2015 JAN 20 AM 10:22

ST - 470 (2012) designed by the Plant Variety Protection Office

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

Corn inbred parent line of hybrid sold in the U.S. - April 15, 2014

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

Patent filed in the U.S. on March 27, 2014 - Application # 14/228,055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE
APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

EXHIBIT A – ORIGIN AND BREEDING HISTORY
** Use additional pages as needed.

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201500077

1. Name of Owner	2. Temporary Designation or Experimental Name	3. Variety Name
Monsanto Technology LLC		A1396Z

4. Describe the genealogy (back to and including public and commercial varieties, lines, or clones used) and the breeding method(s). **

The inbred line CV741729 (a proprietary Monsanto Company inbred) from nursery row 05 10 98 1X HIKA2B7_00004_00524 was crossed to the inbred line CV951318 (a proprietary Monsanto Company inbred) in nursery row 05 10 98 1X HIKA2B7_00004_00525.

5. Give the details of subsequent stages of selection and multiplication. **

Year	Detail of Stage	Selection Criteria
	See attached Origin and Breeding History	A1396Z was selected for its yield, late season health, and stalk strength.

6. Is the variety uniform? X Yes ____ No

How did you test for uniformity?

Corn inbred A1396Z was coded in 2009 with final selection made in 2011. This inbred has been reproduced by self pollination in the summer of 2012 and judged to be stable. Inbred A1396Z is uniform for all traits observed.

7. Is the variety stable? X Yes ____ No

How did you test for stability? Over how many generations?

Corn inbred A1396Z was coded in 2009 with final selection made in 2011. This inbred has been reproduced by self pollination in the summer of 2012 and judged to be stable. Inbred A1396Z is uniform for all traits observed. A1396Z has been observed for three generations of reproduction.

8. Are genetic variants observed or expected during reproduction and multiplication? ____ Yes X No

If yes, state how these variants may be identified, their type and frequency.

A1396Z shows no variants other than what would normally be expected due to environment or that would occur for almost any character during the course of repeated sexual reproduction.

EXHIBIT A

Origin and Breeding History
A1396Z

A1396Z was selected for its yield, late season health, and stalk strength.

Winter 2005-06	The inbred line CV741729 (a proprietary Monsanto Company inbred) from nursery row 05 10 98 1X HIKA2B7_00004_00524 was crossed to the inbred line CV951318 (a proprietary Monsanto Company inbred) in nursery row 05 10 98 1X HIKA2B7_00004_00525.
Summer 2006	The S0 seed was grown and self-pollinated under nursery row 06 04 98 WX IAWLMJNN106_02012_00066.
Winter 2006-07	The S1 seed was grown and self-pollinated in nursery 06 10 05 1A JAPVPV-L4-C_00101_00039. 122 ears were selected.
Summer 2008	S2 ears were grown ear-to-row and self-pollinated. 1 ear was selected in nursery row 08 04 05 05 ILWASCN108_00014_00364.
Winter 2008-09	The S3 ear was grown ear-to-row and self-pollinated. 2 ears were selected in nursery row 08 10 05 1C LIRAS2A_00019_00096.
Summer 2009	S4 ears were grown ear-to-row and self-pollinated. 3 ears from nursery row 09 04 05 05 ILWASCN2_00041_00061 were selected and designated as coded inbred A1396Z.
Winter 2009-10	S5 ears were grown ear-to-row and self-pollinated. 4 ears from nursery row 09 10 05 1C LIRANT-R47-3M6-LM_00012_00081 were selected.
Summer 2010	S6 ears were grown ear-to-row and self-pollinated. 15 ears from nursery row 10 04 AD 05 ILWAPCM1_00008_00179 were selected.
Summer 2011	S7 ears were grown ear-to-row and self-pollinated. 30 ears were selected from following nursery rows: ****** These S8 ear selections were handed off to Pre-Foundation.

Statement of Stability and Uniformity

Corn inbred A1396Z was coded in 2009 with final selection made in 2011. This inbred has been reproduced by self pollination in the summer of 2012 and judged to be stable. Inbred A1396Z is uniform for all traits observed.

Statement of Variants

A1396Z shows no variants other than what would normally be expected due to environment or that would occur for almost any character during the course of repeated sexual reproduction.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE
APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

EXHIBIT B – STATEMENT OF DISTINCTNESS

**** Use additional tables to present clear differences for additional comparison varieties. Use additional pages to present supporting evidence.***

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PVPO NUMBER
201500077

1. Name of Owner	2. Temporary Designation or Experimental Name	3. Variety Name
Monsanto Technology LLC		A1396Z

Based on overall morphology, A1396Z (*Applicant's new variety*) is most similar to I294213 (*Most similar comparison variety(ies)*). A1396Z (*Applicant's new variety*) most clearly differs from I294213 (*Most similar comparison variety(ies)*) in the following traits Name the specific trait. Then list the value of that trait for each variety in the comparison. Submit appropriate supporting evidence (see the Guidelines for Presenting Evidence in Support of Variety Distinctness in the instructions):

	Eg. Leaf Pubescence *Eg. Leaf Color* *Eg. Plant Height*	*heavy pubescence* *Dark Green (5GY 3/4)* *200 cm +/- 10 cm (N=25)*	*glabrous* *Light Green (2.5GY 8/10)* *250 cm +/- 15 cm (N=25)*	*photograph attached* *Munsell Color Chart* *statistics attached*
	1. Qualitative traits:	**2. Color traits:**	**3. Quantitative traits:**	**4. Other traits:**
Application Variety	See attached Ex. B			
Comparison Variety 1				
Comparison Variety 2				
Comparison Variety 3				

***** Use additional tables to present clear differences for additional comparison varieties. Use additional pages to present supporting evidence.***

EXHIBIT B

Statement of Distinctness

Monsanto Technology LLC believes that Corn Variety A1396Z is most similar to Corn Variety I294213, (PVP No. 200400018) a proprietary Monsanto Technology LLC corn variety.

Corn Variety A1396Z differs from Corn Variety I294213 at the following traits:

Year	Name	Upper Leaf Number	Ear Length (CM)	Kernel Row Number	Number of Kernels per Row	Kernel Length (MM)	Kernel Width (MM)
2012	A1396Z	6.9	18.8	15.5	36	11.9	8
	I294213	6.1	17.1	17.2	32.3	11.4	7.7
	Std. Dev_1	0.5	0.8	2.2	3.1	0.5	0.3
	Std. Dev_2	0.7	0.8	1	2.1	0.5	0.4
	Sample_1	15	15	15	15	15	15
	Sample_2	15	15	15	15	15	15
	P_Val	0	0	0.01	0	0.01	0.06
	Sig	**	**	**	**	**	+

Year	Name	Upper Leaf Number	Ear Length (CM)	Kernel Row Number	Number of Kernels per Row	Kernel Length (MM)	Kernel Width (MM)
2013	A1396Z	6.9	17.9	15.1	33.9	11.9	7.6
	I294213	6.3	15.6	17.2	28.5	10.5	6.7
	Std. Dev_1	0.7	0.8	1.5	3.2	0.6	0.7
	Std. Dev_2	0.7	1.2	1.3	3.8	1.2	0.6
	Sample_1	15	15	15	15	15	15
	Sample_2	15	15	15	15	15	15
	P_Val	0.03	0	0	0	0	0
	Sig	*	**	**	**	**	**

Significance levels are indicated as: + = 10%, * = 5 %, ** = 1%

	A1396Z	I294213
Anther Color	Salmon (9)	Purple (17)
Glume Color	Green ~~Purple~~ (17)	Purple ~~Green~~ (2)
Ear Position	Upright (41)	Pendent (43)

JRM 9/30/15

Corn variety A1396Z has more upper leaves, larger ear lengths, fewer kernel rows, more kernels per row, and larger kernel lengths and widths as compared to similar corn variety I294213. In addition, corn variety A1396Z has salmon anther color, ~~purple~~ Green glume color, and upright ear position as compared to similar corn variety I294213 which has purple anther color, ~~green~~ purple glume color, and pendent ear position.

 Form Approved OMB NO 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Corn (*Zea mays* L.)

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME
Monsanto Technology LLC		A1396Z

ADDRESS *(Street and No. or RD No., City, State, Zip Code, and Country)*	FOR OFFICIAL USE ONLY
8350 Minnegan Road Waterman, IL 60556 USA	PVPO NUMBER 201500077

In the spaces on the left, enter the appropriate numbers that describe the characteristics of the application variety. On the right, enter the appropriate numbers that describe the characteristics of the most similar comparison variety. Right justify whole numbers by adding leading zeros if necessary. The variety that you choose for comparison should be the most similar one in terms of overall morphology, background, genetics, and maturity.

In general, for this form, measurements of quantitative traits should be taken in **one trial** on **15-25 randomly selected plants** to obtain averages and statistics that describe a typical field of the variety. Trials should be done preferably in one location, with replicates, in the region of best adaptability (where the variety will grow and perform to its best potential). Trials should include the application variety plus all comparison varieties.

At least one year of trials should be conducted within the United States of America. (Form technical content last updated Dec. 2008.)

The following historical STANDARD INBRED LINES are available from the North Central Regional Plant Introduction Station in Ames, Iowa. They have been well characterized and may be used as comparison varieties. If used, then use the most similar (in background and maturity) of these to make comparisons based on grow-out trial data.

Yellow Dent Families:

Family	Members
B14	CM105, A632, B64, B68
B37	B37, B76, H84
B73	N192, A679, B73, NC268
C103	Mo17, Va102, Va35, A682
Oh43	A619, MS71, H99, Va26
WF9	W64A, A554, A654, Pa91

Yellow Dent (Unrelated):
Co109, ND246
Oh7, T232
W117, W153R
W182BN

White Dent:
CI66, H105, Ky228

Sweet Corn:
C13, Iowa5125, P39, 2132

Popcorn:
SG1533, 4722, HP301, HP7211

Pipecorn:
Mo15W, Mo16W, Mo24W

Describe the Region of Best Adaptability, trial set-up, and the environmental conditions (including monthly temperatures and rainfall) during the trial (continue in Comment Section).

Description of Trial set-up and environmental conditions provided in Exhibit D.

1. TYPE:	Comparison Variety Name: I294213
5 1 = Flint 2= Flint-like 3 = Intermediate 4 = Dent-like 5 = Dent	Type 5

2. MATURITY (In Region Best Adaptability: show Heat Unit Formula in Comments section):

DAYS	HEAT UNITS		DAYS	HEAT UNITS	
83	1504	From **planting** to 50% of plants in silk	80	1427	50% Silk
83	1504	From **planting** to 50% of plants in pollen	80	1427	50% Pollen
Application Variety Data			Comparison Variety Data		

Application Variety Data				Comparison Variety Data			
3. PLANT:		Standard Deviation	Sample Size	Mean		Standard Deviation	Sample Size
221.5	cm Plant Height (to tassel tip)	29.8	15	219.1	cm Plant Height	9.3	15
77.1	cm Ear Height (to base of top ear node)	2.3	15	71.9	cm Ear Height	9.8	15
15.7	cm Length of Top Ear Internode	1.5	15	15.5	cm Internode	2.0	15
5	Anthocyanin of Brace Roots (when brace roots are green with some red or purple anthocyanin in stripes or speckles, rate the shade of anthocyanin) 1 = Absent (Green) 3 = Weak (Pink) 5 = Medium (Light red; Light red/purple) 7 = Strong (Red; Red/purple) 9 = Very Strong (Dark red/purple)			5	Brace Root Anthocyanin		
4. LEAF:		Standard Deviation	Sample Size	Mean		Standard Deviation	Sample Size
9.7	cm Width of Ear Node Leaf	0.4	15	10.2	cm Leaf Width	1.0	15
77.4	cm Length of Ear Node Leaf	3.2	15	80.3	cm Leaf Length	4.3	15
1	Leaf Attitude from main stem to tip of leaf (see UPOV diagrams) 1= Erect 3= Horizontal 5= Drooping			1	Leaf Attitude		
4	Pubescence on margin/edge of leaf sheath (Rate on scale from 1 = none to 9 = like peach fuzz)			4	Pubescence on margin/edge of leaf sheath		
5. TASSEL:		Standard Deviation	Sample Size	Mean		Standard Deviation	Sample Size
6.4	Number of Primary Lateral Branches	1.1	15	6.1	No. Tassel Branches	1.6	15
41.5	cm Tassel Length (From top **node below flag leaf** to tassel tip)	3.7	15	40.9	cm Tassel Length	4.6	15
7.4	cm Tassel Peduncle Length (From top **node below flag leaf** to bottom tassel branch)	1.8	15	7.4	cm Peduncle Length	2.4	15
25.7	cm Tassel Central Spike Length (From top tassel branch to tassel tip)		5.1 15	24.5	cm Central Spike Len	3.3	15
1	Branch Attitude from Central Spike from main spike to tip of tassel branch (see UPOV diagrams): 1 = Erect 3= Horizontal 5= Drooping			1	Tassel Branch Attitude		
9	Anther Color (2-3 days after being exposed to allow for sun reddening effects) 1= Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3= Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5= Red (ex. Munsell 2.5R 4/8) 7= Dark Red (ex. Munsell 10RP 4/8) 9= Purple (ex. Munsell 5RP 5/8)			9	Anther Color		
1	Glume Color (on the top 2/3 of the glume) 1= Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3= Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5= Red (ex. Munsell 2.5R 4/8) 7= Dark Red (ex. Munsell 10RP 4/8) 9= Purple (ex. Munsell 5RP 5/8)			9	Glume Color		
1	Bar Glume Anthocyanin Color (on the bottom 1/3 of glume; see UPOV Diagram; Note: the bar glume is listed as "present" if it is present and the ring is at least 50% closed) 1= Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3= Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5= Red (ex. Munsell 2.5R 4/8) 7= Dark Red (ex. Munsell 10RP 4/8) 9= Purple (ex. Munsell 5RP 5/8)			1	Bar Glume Anthocyanin Color		

Application Variety Data | Comparison Variety Data

Application Variety Data			Comparison Variety Data		
6a. EAR (Unhusked Data):	Standard Deviation	Sample Size	Mean	Standard Deviation	Sample Size
4.0 cm Husk Extension (at harvest)	1.3	15	5.8 cm Husk Extension	1.1	15
25.5 cm Husk Leaf Length	1.3	15	24.8 cm Husk Leaf Len	1.7	15
1 Silk Color (2-3 days after emergence to allow for sun reddening effects) 1= Green or Yellow (ex. Munsell Code 2.5GY 8/6 or 10Y 8.5/6) 3= Pink (ex. Munsell 2.5R 7/6 or 5R 5/6) 5= Red (ex. Munsell 2.5R 4/8) 7= Dark Red (ex. Munsell 10RP 4/8) 9= Purple (ex. Munsell 5RP 5/8)			1 Silk Color		
6b. EAR (Husked Ear Data):	Standard Deviation	Sample Size	Mean	Standard Deviation	Sample Size
17.9 cm Ear Length	0.8	15	15.6 cm Ear Length	1.2	15
43.4 mm Ear Diameter at mid-point	1.1	15	43.5 mm Ear Diameter	2.0	15
261.3 gm Ear Weight			230.5 gm Ear Wt		
15.1 Number of Kernel Rows	1.5	15	17.2 No. Kernel Rows	1.3	15
33.9 Number of Kernels per Row	3.2	15	28.5 No. Kernels per Row	3.8	15
8.5 cm Shank Length	1.6	15	7.2 cm Shank Length	2.0	15
7. KERNEL (Dried):	Standard Deviation	Sample Size	Mean	Standard Deviation	Sample Size
11.9 mm Kernel Length	0.6	15	10.5 mm Kernel Length	1.2	15
7.6 mm Kernel Width	0.7	15	6.7 mm Kernel Width	0.6	15
2 Hard Endosperm Color 1= White (ex. Munsell Code 5Y 9/1 or 2.5Y 8.5/2) 2= Yellow (ex. Munsell Code 2.5Y 8/10 or 7.5YR 7/14) 3= Other (specify_____)			2 Hard Endosperm Color		
1 Endosperm Type: 1 = Normal Starch 2 = High Amylose Starch 3 = Waxy Starch 4 = High Protein 5 = High Lysine 6 = High Oil 7 = Other _____			1 Endosperm Type		
~~226.6~~ 45.3 gm Weight per 100 Kernels (unsized sample)			~~200.2~~ 40.0 gm Kernel Wt.		
8. COB:	Standard Deviation	Sample Size	Mean	Standard Deviation	Sample Size
25.3 mm Cob Diameter at mid-point	1.2	15	24.6 mm Cob Diameter	1.1	15
3 Cob Color 1= White (ex. Munsell 5Y 9/1 or 2.5Y 8.5/2) 2= Pink (ex, Munsell 2.5R 7/6 or 5R 5/6) 3= Red (ex. Munsell 2.5R 4/8 or 10RP 4/8) 4= Other (describe _____)			3 Cob Color		

9. DISEASE RESISTANCE of the variety per se: Name the disease, the causative organism, the races or strains, and the resistance rating (rate from 1 (most susceptible) to 9 (most resistant). Trials should be conducted with resistant and susceptible check varieties, and ensure that adequate disease pressure is present in the trial (such as with inoculations or heavy disease pressure).
EXAMPLE: 7 Helminthosporium Leaf Spot (*Bipolaris zeicola*) Race 2

DISEASE RESISTANCE of the comparison variety per se: Rate the same diseases as tested for the application variety.

Application Variety Data | Comparison Variety Data

EXHIBIT D

The corn varieties A1396Z and I294213 were grown at the Waterman, IL observation nursery in years 2012-2013. The varieties were planted in 2 row plots with 15 plants per row in each of the two years. Trait data were collected on 15 random representative plants for most traits from each 2 row plot. Data on qualitative traits are usually collected on 15 plants from each 2 row plot. For Exhibit C all data were reported as means for one year for subject variety and the standard variety with standard deviation. The varieties are randomly planted in a 4.5 acre observation nursery which is located within a larger 18 acre field. Besides the observation nursery, this field consists of a research seed increase nursery and an IP seed inventory nursery. The location of each of these individual nurseries is rotated each year to a different location within the 18 acre field. Therefore subject inbreds are not planted adjacent to comparative or standard varieties and may be located in different areas of the larger field each year, therefore being influenced by spatial differences within the field. Growing conditions within the field are not uniform as there are some slight topographical variations such as lower areas which may accumulate and retain water or higher areas which are usually drier. The field is tiled and therefore a variety maybe planted close to a tile line while a comparative variety maybe planted further away and in a low spot within the field. Temporal variations can exist as weather conditions from year to year can vary as well as planting dates can vary from year to year based on weather conditions. Weather conditions each year can vary the maturity rate of the varieties due to either favorable or unfavorable growing conditions.

Trait variability is not observed for each variety within its own test plot-plants are usually uniform and data are collected on the "most" representative plants- variability occurs due to spatial location of the test plot for that variety from year to year and to the temporal variation of weather conditions from year to year during the two years data are collected.

Waterman Research Station
Monthly Weather Data
2012-2013

Month	Average Precip. (inch)	Ave. Monthly Temp - Max. (F°)	Ave. Monthly Temp - Min (F°)	Ave. Monthly Rel. Humid - Max (%)	Ave. Monthly Rel. Humid - Min (%)
April 2012	2.4	60.1	37.2	84.6	42.3
May 2012	1.0	76.7	52.0	82.4	40.7
June 2012	1.7	82.1	58.5	85.8	41.7
July 2012	2.7	90.4	67.0	89.3	40.6
August 2012	1.8	83.1	58.0	91.6	48.7
September 2012	1.7	75.5	49.0	92.7	41.2
April 2013	5.5	55.2	34.9	89.4	50.9
May 2013	2.0	72.7	49.6	87.8	44.6
June 2013	4.7	78.2	58.1	90.6	51.8
July 2013	1.1	81.5	61.0	91.8	49.5
August 2013	2.8	81.6	58.5	93.1	49.0
September 2013	1.2	76.8	52.1	93.8	47.0

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE
APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

EXHIBIT E - STATEMENT OF THE BASIS OF OWNERSHIP

FOR OFFICIAL USE ONLY
PVPO NUMBER
201500077

1. Name of Owner	2. Temporary Designation or Experimental Name	3. Variety Name
Monsanto Technology LLC		A1396Z

4. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** [X] **YES** [ ] **NO**

5. Is the applicant a U.S. national or a U.S. based entity? **If no, give name of country.** [■] **YES** [ ] **NO**

6. Is the applicant the original owner? [■] **YES** [ ] **NO** **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
[ ] **YES** [ ] **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
[ ] **YES** [ ] **NO** **If no, give name of country**

7. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

Corn Variety A1396Z was originated and developed by a breeder employed by Monsanto Technology LLC. By agreement between Monsanto Technology LLC and the breeder, all rights to any invention, discovery, or development are assigned to Monsanto Technology LLC. No rights to such invention, discovery, or development are retained by the breeder.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.